Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	5	"beta.hexosaminidase"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:41
L2	727	hexosaminidase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:41
L3	2	hexosaminidase SAME ciliate	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:41
L4	3743	tetrahymena or ciliate	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:41
L5	4	hexosaminidase SAME (tetrahymena or ciliate)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:41
L6	953	ciliate	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L7	758	hexosaminidase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L8	457	"acid hydrolase"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L9	535	beta WITH hexosaminidase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L10	479	beta NEAR5 hexosaminidase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L11	4	ciliate and (beta NEAR5 hexosaminidase)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41

L12	10212	protozoa	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L13	11	protozoa and (beta NEAR5 hexosaminidase)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L14	8780	hartmann.in. or tiedtke.in. or baumert.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L15	9	(hartmann.in. or tiedtke.in. or baumert.in.) and ciliate	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L16	6	cilian.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L17	54334	recombinant WITH expression	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L18	349	(recombinant WITH expression) and ciliate	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L19	3	((recombinant WITH expression) and ciliate) and hexosaminidase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L20	1852	protozoa and (recombinant WITH expression)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L21	16	(protozoa and (recombinant WITH expression)) and hexosaminidase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L22	35342	"protein expression" or "protein production"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L23	143	("protein expression" or "protein production") and hexosaminidase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41

L24	6	(("protein expression" or "protein production") and hexosaminidase) and (ciliate or protozoa)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L25	3214	tetrahymena	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L26	54	(tetrahymena or protozoa or ciliate) and "acid hydrolase"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L27	17	((tetrahymena or protozoa or ciliate) and "acid hydrolase") and ("protein expression" or "protein production")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/01/28 14:41
L28	65511	recombinant SAME expression	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:46
L29	289	l28 and l2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:46
L30	3	l29 and ciliat$	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:50
L31	3	l14 and l2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:49
L32	64482	(|435/6|435/320.1|435/183|530/300|530/350|530/402|536/23.1|536/23.4|536/24.1|.ccls.)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 14:52
L33	2	l32 and l1	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 15:51
L34	10166	PROTOZOA	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 15:51
L35	26	L34 AND L2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 15:52

L36	19	L35 AND (RECOMBINANT OR HETEROLOGOUS OR RECOMBIN$)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/01/28 15:52

	U	Document ID	Title
1	X	US 20040248262 A1	Constructs for expressing lysomal polypeptides
2	X	US 20040146497 A1	Therapeutic and cosmetic uses of heparanases
3	X	US 20040142427 A1	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells
4	X	US 20030236215 A1	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells
5	X	US 20030217375 A1	Transgenic animals expressing heparanase and uses thereof
6	X	US 20030190737 A1	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells
7	X	US 20030170860 A1	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells
8	X	US 20030161823 A1	Therapeutic and cosmetic uses of heparanases
9	X	US 20030157113 A1	Compositions and methods for treatment of neoplastic disease
10	X	US 20030072761 A1	Methods and compositions for targeting proteins across the blood brain barrier
11	X	US 20020168749 A1	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells
12	X	US 20020102560 A1	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells

	U	Document ID	Title
13	X	US 20020058288 A1	TOXOPLASMA GONDII GLYCOCONJUGATES
14	X	US 20020037260 A1	Compositions for treating biofilm
15	X	US 6790658 B2	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells
16	X	US 6716617 B1	Fermentation method with continuous mass cultivation of ciliates (protozoa) for producing biogenous valuable substances
17	X	US 6664105 B1	Polynucleotide encoding a polypeptide having heparanase activity and expression of same in genetically modified cells
18	X	US 5789229 A	Stranded RNA virus particles
19	X	US 5696000 A	Adhesion receptors for pathogenic or opportunistic microorganisms

L5 ANSWER 1 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2004395322 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 15299959
TITLE: Crystallization and preliminary X-ray characterization of G(M2)-activator protein.
AUTHOR: Wright C S
SOURCE: Acta crystallographica. Section D, Biological crystallography, (1997 Mar) 53 (Pt 2) 211-2. Journal code: 9305878. ISSN: 0907-4449.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: IN-DATA-REVIEW; IN-PROCESS; NONINDEXED
ENTRY DATE: Entered STN: 20040810
Last Updated on STN: 20041219

AB G(M2) activator protein is a glycolipid transfer protein cofactor necessary for the hydrolytic degradation of G(M2) ganglioside by beta-**hexosaminidase** A. Its absence in human tissue results in symptoms of type AB Tay-Sachs disease. The protein prepared by **recombinant** techniques using an E. coli **expression** system, has been crystallized by the vapor-diffusion technique. The crystals are well ordered and belong to the orthorhombic space group P2(1)2(1)2(1). The unit-cell dimensions are a = 42.40, b = 39.82, c = 113.61 A. One molecule is contained in the asymmetric unit.

L5 ANSWER 2 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2000434452 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10908279
TITLE: Evidence for the participation of beta-**hexosaminidase** in human sperm-zona pellucida interaction in vitro.
AUTHOR: Miranda P V; Gonzalez-Echeverria F; Blaquier J A; Mahuran D J; Tezon J G
CORPORATE SOURCE: Instituto de Biologia y Medicina Experimental (CONICET), Buenos Aires, Fertilab, Buenos Aires, Argentina.
SOURCE: Molecular human reproduction, (2000 Aug) 6 (8) 699-706. Journal code: 9513710. ISSN: 1360-9947.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200009
ENTRY DATE: Entered STN: 20000928
Last Updated on STN: 20000928
Entered Medline: 20000919

AB Mammalian sperm-zona pellucida (ZP) interaction is mediated by sperm lectin-like proteins and ZP glycoproteins. We have previously reported the participation of binding sites for N-acetylglucosamine (GlcNAc) residues in human sperm function, including sperm interaction with the ZP. Additionally, previous results from our laboratory suggested that some of these events may be mediated by the glycosidase N-acetylglucosaminidase (beta-**hexosaminidase**, Hex, in mammals). In this study, we report the possible participation of Hex in human sperm-ZP interaction. Human **recombinant** Hex (hrHex) was obtained by **expression** in a stable transfected CHO cell line. When the **recombinant** enzyme was present during hemizona (HZ) assays, the number of sperm bound per HZ was significantly reduced. The same result was obtained when HZ were preincubated with hrHex. Additionally, the presence of a Hex-specific substrate during the HZ assay produced the same inhibitory effect. These results suggest the participation of a sperm Hex in the interaction with human ZP in vitro.

L5 ANSWER 3 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2000395304 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10880748
TITLE: Stem cell factor and interleukin-4 increase responsiveness of mast cells to substance P.
AUTHOR: Karimi K; Redegeld F A; Blom R; Nijkamp F P
CORPORATE SOURCE: Department of Pharmacology and Pathophysiology, Utrecht Institute for Pharmaceutical Sciences, Faculty of Pharmacy, Utrecht University, Utrecht, The Netherlands.
SOURCE: Experimental hematology, (2000 Jun) 28 (6) 626-34.
Journal code: 0402313. ISSN: 0301-472X.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200008
ENTRY DATE: Entered STN: 20000824
Last Updated on STN: 20000824
Entered Medline: 20000817

AB The response of mast cells (MC) to non-IgE-mediated stimulation is critically dependent on the population of MC examined. The neuropeptide Substance P (SP) has been reported to activate connective tissue-type MC (CTMC), while mucosal MC (MMC) are not activated by SP. We examined the effect of stem cell factor (SCF) plus interleukin-4 (IL-4) on SP-initiated activation of bone marrow-derived MC (BMMC).Mouse MC, derived from a culture of BM cells with IL-3, were subsequently treated with **recombinant** SCF plus IL-4 for 6 days. Responsiveness to SP was monitored measuring beta-**hexosaminidase** and lipid mediator release. Histochemical staining, histamine analysis, and granule protease **expression** were achieved to characterize the cells.In contrast to IL-3 grown cells, SCF/IL-4-exposed cells showed functional responsiveness to release beta-**hexosaminidase** (42.25% +/- 1.46% at SP concentration of 100 microM) and produce leukotriene C(4) (LTC(4)) (7.4 +/- 1.5 ng/10(6) cells)/prostaglandin D(2) (PGD(2)) (2.0 +/- 0.3 ng/10(6) cells) upon stimulation by SP. The increase in sensitivity of the cells to SP was not due to differentiation into CTMC, as the cells remained heparin negative. Both SCF and IL-4 were needed because SCF or IL-4 alone were insufficient to keep cells viable after 3 to 4 days post coculture. SP-induced secretion from BMMC cultured in medium containing SCF plus IL-4 (25.76% +/- 1.83%) was higher in comparison with cells cultured with SCF plus IL-3 (8.85% +/- 0.68%).These findings indicate that temporal changes in cytokine **expression** can influence the sensitivity of MC to non-immunologic stimuli. Local cytokine production leading to an increase in MC responsiveness to SP and inducing secretion of granule content and lipid generation may, therefore, propagate and worsen inflammatory conditions.

L5 ANSWER 4 OF 16 MEDLINE on STN
ACCESSION NUMBER: 1999201380 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10099604
TITLE: Glycosylation of a recombinant protein in the Tn5B1-4 insect cell line: influence of ammonia, time of harvest, temperature, and dissolved oxygen.
AUTHOR: Donaldson M; Wood H A; Kulakosky P C; Shuler M L
CORPORATE SOURCE: School of Chemical Engineering, Cornell University, 120 Olin Hall, Ithaca, New York, USA.
SOURCE: Biotechnology and bioengineering, (1999 May 5) 63 (3) 255-62.
Journal code: 7502021. ISSN: 0006-3592.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199904
ENTRY DATE: Entered STN: 19990511
Last Updated on STN: 19990511
Entered Medline: 19990426

AB Glycosylation is both cell line and protein dependent. Culture conditions can also influence the profile of glycoforms produced. To examine this possibility in the insect cell/baculovirus system, structures of N-linked oligosaccharides attached to SEAP (human secreted alkaline phosphatase), expressed under various culture conditions in BTI Tn5B1-4 cells, were characterized using FACE (fluorescence-assisted carbohydrate electrophoresis). Parameters varied were time of harvest, ammonia added during infection, dissolved oxygen, and temperature. It was found that glycosylation in the insect cell/baculovirus **expression** system is a robust, stable system that is less perturbed by variations in culture conditions than the level of protein **expression**. Addition of ammonia and low oxygen conditions affected SEAP **expression**, but not the oligosaccharide profile of SEAP. Time of SEAP harvest increased the amount of alpha-mannosidase resistant structures from 4.1% at 34 hours postinfection (h pi), to 5.0% at 100 h pi, and to 7.5% at 120 h pi. These structures were primarily sensitive to N-acetylhexosaminidase digest, although a small amount was insensitive to both mannosidase and N-acetyl-**hexosaminidase** digests. Lowering the temperature from 28 degrees C to 24 degrees C or even 20 degrees C, resulted in a twofold increase in oligosaccharides containing terminal alpha(1,3)-mannose residues. This condition did not affect the amount of mannosidase-resistant structures. However, this could result in more complete glycosylation of **recombinant** proteins in the BTI Tn5B1-4 cell line, because more structures with the potential for further processing would be produced.

L5 ANSWER 5 OF 16 MEDLINE on STN
ACCESSION NUMBER: 1998194469 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9533270
TITLE: The effects of **recombinant** ovine interleukin-3 and **recombinant** ovine stem cell factor on the growth and mediator **expression** of caprine and ovine bone marrow-derived mast cells.
AUTHOR: Macaldowie C N; Huntley J F; Mackellar A; McInnes C; Haig D M
CORPORATE SOURCE: Moredun Research Institute, Edinburgh, UK.
SOURCE: Veterinary immunology and immunopathology, (1997 Dec 12) 60 (1-2) 97-110.
Journal code: 8002006. ISSN: 0165-2427.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199805
ENTRY DATE: Entered STN: 19980520
Last Updated on STN: 20000303
Entered Medline: 19980514

AB The growth of ovine and caprine mast cells in bone marrow cultures has been achieved using recombinant ovine interleukin-3 (rOvIL-3) and recombinant ovine stem cell factor (rOvSCF). After approximately 2-3 weeks' growth in optimal concentrations of either rOvIL-3 alone or a combination of rOvIL-3 and rOvSCF, the majority of the cells produced in bone marrow culture from both species were mast cells. The significant increase in the total numbers of cells and survival times of the cultures when both cytokines were present compared to either alone, indicated synergy between rOvIL-3 and rOvSCF on mast cell growth. Ovine and caprine

cells cultured in rOvIL-3 alone produced a four-fold increase in cell numbers compared with medium only controls. The resulting cultures contained up to 52% mast cells by day 18 and had a lifespan of 3-4 weeks. In contrast, cells from both species grown in both rOvIL-3 and rOvSCF produced up to six times more cells than the equivalent rOvIL-3 stimulated cultures, contained up to 69% mast cells by day 21 and could be maintained for at least 6 weeks. Ovine cells grown in rOvIL-3 alone or rOvIL-3 and rOvSCF contained significantly more aryl-sulfatase and serine protease but similar amounts of beta-**hexosaminidase** compared with caprine cells during the second week of culture. There were no significant differences in the granule-associated mediator content of cells from either individual species grown in rOvIL-3 alone compared with those grown in rOvIL-3 and rOvSCF during the first 21 days of culture.

L5 ANSWER 6 OF 16 MEDLINE on STN
ACCESSION NUMBER: 97390393 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9242626
TITLE: Activated mast cells release extracellular type platelet-activating factor acetylhydrolase that contributes to autocrine inactivation of platelet-activating factor.
AUTHOR: Nakajima K; Murakami M; Yanoshita R; Samejima Y; Karasawa K; Setaka M; Nojima S; Kudo I
CORPORATE SOURCE: Department of Health Chemistry, School of Pharmaceutical Sciences, Showa University, 1-5-8 Hatanodai, Japan.
SOURCE: Journal of biological chemistry, (1997 Aug 8) 272 (32) 19708-13.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199709
ENTRY DATE: Entered STN: 19970922
Last Updated on STN: 19970922
Entered Medline: 19970905

AB IgE-dependent and -independent activation of mouse bone marrow-derived mast cells (BMMC) elicited rapid and transient production of platelet-activating factor (PAF), which reached a maximal level by 2-5 min and was then degraded rapidly, returning to base-line levels by 10-20 min. Inactivation of PAF was preceded by the release of PAF acetylhydrolase (PAF-AH) activity, which reached a plateau by 3-5 min and paralleled the release of beta-**hexosaminidase**, a marker of mast cell exocytosis. Immunochemical and molecular biological studies revealed that the PAF-AH released from activated mast cells was identical to the plasma-type isoform. In support of the autocrine action of exocytosed PAF-AH, adding exogenous **recombinant** plasma-type PAF-AH markedly reduced PAF accumulation in activated BMMC. Furthermore, culture of BMMC with a combination of c-kit ligand, interleukin-1beta and interleukin-10 for > 24 h led to an increase in plasma-type PAF-AH **expression**, accompanied by a reduction in stimulus-initiated PAF production. Collectively, these results suggest that plasma-type PAF-AH released from activated mast cells sequesters proinflammatory PAF produced by these cells, thereby revealing an intriguing anti-inflammatory aspect of mast cells.

L5 ANSWER 7 OF 16 MEDLINE on STN
ACCESSION NUMBER: 97218239 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9065471
TITLE: Evidence for the involvement of Glu-355 in the catalytic action of human beta-**hexosaminidase** B.
AUTHOR: Pennybacker M; Schuette C G; Liessem B; Hepbildikler S T; Kopetka J A; Ellis M R; Myerowitz R; Sandhoff K; Proia R L

CORPORATE SOURCE: Section on Biochemical Genetics, Genetics and Biochemistry Branch, NIDDK, National Institutes of Health, Bethesda, Maryland 20892, USA.
SOURCE: Journal of biological chemistry, (1997 Mar 21) 272 (12) 8002-6.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199704
ENTRY DATE: Entered STN: 19970506
Last Updated on STN: 19970506
Entered Medline: 19970418

AB In a previous study the photoactivable affinity probe, 3-azi-1-[([6-3H]2-acetamido-2-deoxy-1-beta-D-galactopyranosyl)thio]-b utane, was used to identify the active site of beta-**hexosaminidase** B, a beta-subunit dimer (Liessem, B., Glombitza, G. J., Knoll, F., Lehmann, J., Kellermann, J., Lottspeich, F., and Sandhoff, K. (1995) J. Biol. Chemical 270, 23693-23699). The probe predominately labeled Glu-355, a highly conserved residue among hexosaminidases. To determine if Glu-355 has a role in catalysis, beta-subunit mutants were prepared with the Glu-355 codon altered to either Ala, Gln, Asp, or Trp. After **expression** of mutant proteins using **recombinant** baculovirus, the enzyme activity associated with the beta-subunits was found to be reduced to background levels. Although catalytic activity was lost, the mutations did not otherwise affect the folding or assembly of the subunits. The mutant beta-subunits could be isolated using substrate affinity chromatography, indicating they contained intact substrate binding sites. As shown by cross-linking with disuccinimidyl suberate, the mutant beta-subunits were properly assembled. They could also participate in the formation of functional beta-**hexosaminidase** A activity as indicated by activator-dependent GM2 ganglioside degradation activity produced by co-**expression** of the mutant beta-subunits with the alpha-subunit. Finally, the mutant subunits showed normal lysosomal processing in COS-1 cells, demonstrating that a transport-competent protein conformation had been attained. Collectively the results provide strong support for the intimate involvement of Glu-355 in beta-**hexosaminidase** B-mediated catalysis.

L5 ANSWER 8 OF 16 MEDLINE on STN
ACCESSION NUMBER: 97131714 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8977215
TITLE: Mouse bone marrow-derived mast cells undergo exocytosis, prostanoid generation, and cytokine expression in response to G protein-activating polybasic compounds after coculture with fibroblasts in the presence of c-kit ligand.
AUTHOR: Ogasawara T; Murakami M; Suzuki-Nishimura T; Uchida M K; Kudo I
CORPORATE SOURCE: Department of Molecular Pharmacology, Meiji College of Pharmacy, Nozawa, Setagaya-ku, Tokyo, Japan.
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (1997 Jan 1) 158 (1) 393-404.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199701
ENTRY DATE: Entered STN: 19970219
Last Updated on STN: 20021218
Entered Medline: 19970130

AB Polycationic mast cell activators, such as compound 48/80 and substance P, have been reported to activate connective tissue-type mast cells specifically by interacting directly with the Gi family of trimeric GTP-binding protein. We now demonstrate that mouse bone marrow-derived mast cells (BMMC) developed in IL-3, an immature mast cell population lacking responsiveness to the Gi-coupled polycationic mast cell activators, underwent maturation toward a connective tissue-type mast cells-like phenotype that responded to polycationic compounds after only 4 to 6 days of coculture with Swiss 3T3 fibroblasts in concert with **recombinant** soluble c-kit ligand (KL), whereas 3T3 or KL alone was insufficient to mediate this process. Under optimal conditions, cocultured BMMC released approximately 30% beta-**hexosaminidase** and generated approximately 1 ng of PGD2/10(6) cells within a few minutes in response to compound 48/80 or substance P. Furthermore, these cells expressed cytokines, such as IL-1beta and IL-6, and PG endoperoxide synthase-2 1 to 4 h after stimulation with compound 48/80 or substance P. All these responses were suppressed effectively by pertussis toxin, implicating functional Gi coupling. Regardless of the remarkable change in polycationic compound sensitivity, there was only a minimal change in the constitutive **expression** of Gi3 alpha after coculture. These results together with the observation that before coculture BMMC responded to thrombin through its Gi-coupled receptor suggest that the alteration in a certain step(s) distinct from the level of Gi3 alpha protein **expression** is important for the acquisition of responsiveness to the polycationic compounds by the synergistic action of KL and 3T3 fibroblast-derived factor. Several lines of evidence have revealed that 3T3-derived factor appears to differ from the known cytokines, prostanoids, and adhesion molecules and is a labile soluble substance.

L5 ANSWER 9 OF 16 MEDLINE on STN
ACCESSION NUMBER: 96291894 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8663217
TITLE: Identification of domains in human beta-**hexosaminidase** that determine substrate specificity.
AUTHOR: Pennybacker M; Liessem B; Moczall H; Tifft C J; Sandhoff K; Proia R L
CORPORATE SOURCE: Section on Biochemical Genetics, Genetics and Biochemistry Branch, NIDDK, National Institutes of Health, Bethesda, Maryland 20892, USA.
SOURCE: Journal of biological chemistry, (1996 Jul 19) 271 (29) 17377-82.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199609
ENTRY DATE: Entered STN: 19960919
Last Updated on STN: 19970203
Entered Medline: 19960912

AB The lysosomal beta-hexosaminidases are dimers composed of alpha and beta subunits. beta-**Hexosaminidase** A (alphabeta) is a heterodimer, whereas **hexosaminidase** B (betabeta) and S (alphaalpha) are homodimers. Although containing a high degree of amino acid identity, each subunit expresses a unique active site that can be distinguished by a differential ability to hydrolyze charged substrates. The site on the beta-subunit primarily degrades neutral substrates, whereas the alpha-subunit site is, in addition, active against sulfated substrates. Isozyme specificity is also exhibited with glycolipid substrates. Among human isozymes, only beta-**hexosaminidase** A together with the GM2 activator protein can degrade the natural substrate, GM2 ganglioside, at

physiologically significant rates. To identify the domains of the human beta-**hexosaminidase** subunits that determine substrate specificity, we have generated chimeric subunits containing both alpha- and beta-subunit sequences. The chimeric constructs were expressed in HeLa cells to screen for activity and then selected constructs were produced in the baculovirus **expression** system to assess their ability to degrade GM2 ganglioside in the presence of GM2 activator protein. Generation of activity against the sulfated substrate required the substitution of two noncontinuous alpha-subunit sequences (amino acids 1-191 and 403-529) into analogous positions of the beta-subunit. Chimeric constructs containing only one of these regions linked to the beta-subunit sequence showed either neutral substrate activity only (amino acids 1-191) or lacked enzyme activity entirely (amino acids 403-529). Neither the chimeras nor the wild-type subunits displayed activator-dependent GM2-hydrolyzing activity when expressed alone. However, one chimeric subunit containing alpha amino acids 1-191 fused with beta amino acids 225 to 556, when co-expressed with the wild-type alpha-subunit, showed activity comparable with that of **recombinant** beta-**hexosaminidase** A formed by the co-**expression** of the alpha- and beta-subunits. This result indicates that the beta-subunit amino acids 225-556 contribute an essential function in the GM2-hydrolyzing activity of beta-**hexosaminidase** A.

L5 ANSWER 10 OF 16 MEDLINE on STN
ACCESSION NUMBER: 96152741 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8566061
TITLE: Interleukin-10 inhibits cytokine generation from mast cells.
AUTHOR: Arock M; Zuany-Amorim C; Singer M; Benhamou M; Pretolani M
CORPORATE SOURCE: Laboratoire d'Hematologie Cellulaire et Moleculaire, Faculte de Pharmacie, Paris, France.
SOURCE: European journal of immunology, (1996 Jan) 26 (1) 166-70. Journal code: 1273201. ISSN: 0014-2980.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199603
ENTRY DATE: Entered STN: 19960315
Last Updated on STN: 19960315
Entered Medline: 19960306

AB This report examines the effects of **recombinant** murine interleukin-10 (rmIL-10) on antigen-induced beta-**hexosaminidase**, leukotriene (LT)C4 and cytokine release from mouse bone marrow-derived mast cells (BMMC). BMMC sensitized to hapten-monoclonal IgE directed against dinitrophenol-bovine serum albumin (DNP-BSA) and challenged with 10 ng/ml DNP-BSA generated beta-**hexosaminidase** and LTC4-like material which was followed by tumor necrosis factor-alpha (TNF-alpha) and granulocyte-macrophage colony-stimulating factor (GM-CSF) mRNA **expression** and protein release. Incubation of BMMC with 1-100 ng/ml rmIL-10 inhibited cytokine generation, without affecting beta-**hexosaminidase** and LTC4-like material release. TNF-alpha, but not GM-CSF mRNA **expression**, was also diminished in rmIL-10-treated BMMC, suggesting that down-regulation of cytokine production by rmIL-10 involves different mechanisms. These results identify a novel biological action of IL-10 as an inhibitor of cytokine production by stimulated mast cells.

L5 ANSWER 11 OF 16 BIOSIS on STN
ACCESSION NUMBER: 2002:563845 BIOSIS
DOCUMENT NUMBER: PREV200200563845

TITLE: Restoration of the GM2 ganglioside metabolism in bone marrow-derived stromal cells from Tay-Sachs disease animal model.

AUTHOR(S): Martino, S.; Cavalieri, C.; Emiliani, C.; Dolcetta, D.; Cusella De Angelis, M. G.; Chigorno, V.; Severini, G. M.; Sandhoff, K.; Bordignon, C.; Sonnino, S.; Orlacchio, A. [Reprint author]

CORPORATE SOURCE: Dipartimento di Scienze Biochimiche e Biotecnologie Molecolari, University of Perugia, Via del Giochetto, 06126, Perugia, Italy
orly@unipg.it

SOURCE: Neurochemical Research, (August, 2002) Vol. 27, No. 7-8, pp. 793-800. print.
CODEN: NEREDZ. ISSN: 0364-3190.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 30 Oct 2002
Last Updated on STN: 30 Oct 2002

AB The therapeutic potential of bone marrow-derived stromal cells for the therapy of Tay-Sachs disease is primarily related to the restoration of their own GM2 ganglioside storage. With this aim, we produced bone marrow-derived stromal cells from the adult Tay-Sachs animal model and transduced them with a retroviral vector encoding for the alpha-subunit of the lysosomal enzyme beta-**hexosaminidase** A (E.C. 3.2.1.52). Our results demonstrate that transduced Tay-Sachs bone marrow-derived stromal cells have beta-**hexosaminidase** A comparable to that of bone marrow-derived stromal cells from wild-type mice. Moreover, beta-**hexosaminidase** A in transduced Tay-Sachs bone marrow-derived stromal cells was able to hydrolyze the GM2 ganglioside in a feeding experiment, thus demonstrating the correction of the altered phenotype.

L5 ANSWER 12 OF 16 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

ACCESSION NUMBER: 2002:156155 BIOSIS

DOCUMENT NUMBER: PREV200200156155

TITLE: Molecular genetics of the beta-**hexosaminidase** isoenzymes: An introduction.

AUTHOR(S): Kolodny, Edwin H. [Reprint author]

CORPORATE SOURCE: Department of Neurology, New York University School of Medicine, New York, NY, USA

SOURCE: Desnick, Robert J. [Editor]; Kaback, Michael M. [Editor]. Adv. Genet., (2001) pp. 101-126. Advances in Genetics. Tay-Sachs disease. print.
Publisher: Academic Press Inc., 525 B Street, Suite 1900, San Diego, CA, 92101-4495, USA. Series: Advances in Genetics.
CODEN: ADGEAV. ISSN: 0065-2660. ISBN: 0-12-017644-0 (cloth).

DOCUMENT TYPE: Book
Book; (Book Chapter)

LANGUAGE: English

ENTRY DATE: Entered STN: 21 Feb 2002
Last Updated on STN: 26 Feb 2002

L5 ANSWER 13 OF 16 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

ACCESSION NUMBER: 2002:140549 BIOSIS

DOCUMENT NUMBER: PREV200200140549

TITLE: Synergistic activity of endochitinase and exochitinase from Trichoderma atroviride (T. harzianum) against the pathogenic fungus (Venturia inaequalis) in transgenic apple plants.

AUTHOR(S): Bolar, Jyothi Prakash; Norelli, John L.; Harman, Gary E. [Reprint author]; Brown, Susan K.; Aldwinckle, Herb S.
CORPORATE SOURCE: Department of Horticultural Sciences, Cornell University, New York State Agricultural Experiment Station, Geneva, NY, 14456, USA
geh3@nysaes.cornell.edu
SOURCE: Transgenic Research, (December, 2001) Vol. 10, No. 6, pp. 533-543. print.
ISSN: 0962-8819.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 6 Feb 2002
Last Updated on STN: 26 Feb 2002

AB Genes from the biocontrol fungus Trichoderma atroviride encoding the antifungal proteins endochitinase or exochitinase (N-acetyl-beta-D-**hexosaminidase**) were inserted into 'Marshall McIntosh' apple singly and in combination. The genes were driven by a modified CaMV35S promoter. The resulting plants were screened for resistance to Venturia inaequalis, the causal agent of apple scab, and for effects of enzyme expression on growth. Disease resistance was correlated with the level of expression of either enzyme when expressed alone but exochitinase was less effective than endochitinase. The level of expression of endochitinase was negatively correlated with plant growth while exochitinase had no consistent effect on this character. Plants expressing both enzymes simultaneously were more resistant than plants expressing either single enzyme at the same level; analyses indicated that the two enzymes acted synergistically to reduce disease. Selected lines, especially one expressing low levels of endochitinase activity and moderate levels of exochitinase activity, were highly resistant in growth chamber trials and had negligible reduction in vigor relative to control plants. We believe that this is the first report of resistance in plants induced by expression of an N-acetylhexosaminidase and is the first report of in planta synergy between an exochitinase and an endochitinase.

L5 ANSWER 14 OF 16 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 2001:492745 BIOSIS
DOCUMENT NUMBER: PREV200100492745
TITLE: Retrovirus-mediated transfer and expression of beta-**hexosaminidase** alpha-chain cDNA in human fibroblasts from GM2-gangliosidosis B1 variant.
AUTHOR(S): Teixeira, C. A.; Sena-Esteves, M.; Lopes, L.; Sa Miranda, M. C.; Ribeiro, M. G. [Reprint author]
CORPORATE SOURCE: IBMC-Unidade de Neurobiologia Genetica, R. Campo Alegre 823, 4150-180, Porto, Portugal
gribeiro@ibmc.up.pt
SOURCE: Human Gene Therapy, (September 20, 2001) Vol. 12, No. 14, pp. 1771-1783. print.
ISSN: 1043-0342.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 24 Oct 2001
Last Updated on STN: 23 Feb 2002

AB Mutations in the alpha-chain of lysosomal **hexosaminidase** (EC 3.2.1.52) underlie two distinct biochemical phenotypes known as variant B and variant B1 of GM2 gangliosidosis. This paper shows that the transduction of human B1-type fibroblasts (producing catalytically inactive alpha-chains) with a retroviral vector encoding the human **hexosaminidase** alpha-chain leads to a complete correction of HexA (alphabeta dimer) activity with both synthetic and natural substrates. The alpha-subunit overexpression leads to a partial HexB (betabeta dimer) depletion corresponding to about 10% of control HexB activity. The newly

synthesized enzyme is correctly processed and targeted to the lysosomes in transduced cells. The high levels of recombinant enzyme correctly produced the metabolic defect, enabling the cells efficiently to degrade the accumulated storage product present in lysosomes. The transduced fibroblasts are also able to secrete HexA efficiently into the culture medium. Moreover, transfer of the human transgene product to B1-type deficient fibroblasts lead to an increase of activity against 4MUGS, the alpha-chain specific synthetic substrate, up to 30% of the control mean activity level. This level of activity might be sufficient to restore the normal ganglioside GM2 metabolism in recipient cells. The data obtained demonstrate that B1-type phenotype can be efficiently corrected by retrovirus-mediated gene transfer.

L5 ANSWER 15 OF 16 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

ACCESSION NUMBER: 2001:334478 BIOSIS
DOCUMENT NUMBER: PREV200100334478
TITLE: Identification of the 6-sulfate binding site unique to alpha-subunit-containing isozymes of human beta-**hexosaminidase**.
AUTHOR(S): Sharma, Rohita; Deng, Huinan; Leung, Amy; Mahuran, Don [Reprint author]
CORPORATE SOURCE: Research Institute, Hospital for Sick Children, 555 University Ave., Toronto, ON, M5G 1X8, Canada
hex@sickkids.on.ca
SOURCE: Biochemistry, (May 8, 2001) Vol. 40, No. 18, pp. 5440-5446. print.
CODEN: BICHAW. ISSN: 0006-2960.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 18 Jul 2001
Last Updated on STN: 19 Feb 2002

AB In humans, beta-**hexosaminidase** A (alphabeta) is required to hydrolyze GM2 ganglioside. A deficiency of either the alpha- or beta-subunit leads to a severe neurological disease, Tay-Sachs or Sandhoff disease, respectively. In mammals beta-**hexosaminidase** B (betabeta) and S (alphaalpha) are other major and minor isozymes. The primary structures of the alpha- and beta-subunits are 60% identical, but only the alpha-containing isozymes can efficiently hydrolyze beta-linked GlcNAc-6-SO4 from natural or artificial substrates. **Hexosaminidase** has been grouped with glycosidases in family 20. A molecular model of the active site of the human **hexosaminidase** has been generated from the crystal structure of a family 20 bacterial chitobiase. We now use the chitobiase structure to identify residues close to the carbon-6 oxygen of NAG-A, the nonreducing beta-GlcNAc residue of its bound substrate. The chitobiase side chains in the best interactive positions align with alpha-Asn423Arg424 and beta-Asp453Leu454. The change in charge from positive in alpha to negative in beta is consistent with the lower Km of **hexosaminidase** S, and the much higher Km and lower pH optimum of **hexosaminidase** B, toward sulfated versus unsulfated substrates. In vitro mutagenesis, CHO cell expression, and kinetic analyses of an alphaArg424Lys **hexosaminidase** S detected little change in Vmax but a 2-fold increase in Km for the sulfated substrate. Its Km for the nonsulfated substrate was unaffected. When alphaAsn423 was converted to Asp, again only the Km for the sulfated substrate was changed, increasing by 6-fold. Neutralization of the charge on alphaArg424 by substituting Gln produced a **hexosaminidase** S with a Km decrease of 3-fold and a Vmax increased by 6-fold for the unsulfated substrate, parameters nearly identical to those of **hexosaminidase** B at pH 4.2. As well, for the sulfated substrate at pH 4.2 its Km was increased 9-fold and its Vmax decreased 1.5-fold, values very similar to those of **hexosaminidase** B

obtained at pH 3.0, where its betaAsp453 becomes protonated.

L5 ANSWER 16 OF 16 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

ACCESSION NUMBER: 2001:101115 BIOSIS
DOCUMENT NUMBER: PREV200100101115
TITLE: Effect of 12 bp deletion mutation in exon 10 of beta **hexosaminidase** alpha subunit gene on enzymes of heterozygote parents.
AUTHOR(S): Sinici, Incilay [Reprint author]; Ozkara, H. Asuman [Reprint author]; Topcu, Meral; Ciliv, Gonenc [Reprint author]
CORPORATE SOURCE: Department of Biochemistry, Hacettepe University Faculty of Medicine, Sihhiye, 06100, Ankara, Turkey
SOURCE: Biochemical Society Transactions, (October, 2000) Vol. 28, No. 5, pp. A307. print.
Meeting Info.: 18th International Congress of Biochemistry and Molecular Biology. Birmingham, UK. July 16-20, 2000. International Union of Biochemistry and Molecular Biology; Federation of European Biochemical Societies; Biochemical Society.
CODEN: BCSTB5. ISSN: 0300-5127.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 28 Feb 2001
Last Updated on STN: 15 Feb 2002

=>

```
 FILE 'MEDLINE, EMBASE, BIOSIS' ENTERED AT 14:52:55 ON 28 JAN 2005
L1          6829 S HEXOSAMINIDASE
L2        114999 S RECOMBINANT (P) EXPRESSION
L3            38 S L1 AND L2
L4            20 DUP REM L3 (18 DUPLICATES REMOVED)
L5            16 S L4 NOT PY>=2003
L6             0 S L5 AND CILIAT?
L7         45062 S CILIAT?
L8            19 S L7 AND L1
L9            19 S L8 NOT PY>=2003
L10           16 DUP REM L9 (3 DUPLICATES REMOVED)
L11        21897 S HARTMANN?/AU OR TIEDTKE?/AU OR BAUMERT?/AU
L12           20 S L11 AND L1
L13           10 DUP REM L12 (10 DUPLICATES REMOVED)
L14          124 S L11 AND L2
L15            0 S L14 AND TETRAYMENA
L16        16026 S TETRAHYMENA
L17            0 S L14 AND L16
L18           99 S L11 AND L16
L19           17 S L18 AND L1
L20            8 DUP REM L19 (9 DUPLICATES REMOVED)
L21            8 S L20 NOT PY>=2003
L22           15 S HUNSELER?/AU
L23            9 DUP REM L22 (6 DUPLICATES REMOVED)
L24            1 S L23 AND L1
L25            0 S L23 AND L2
L26            0 S L23 AND RECOMBIN?
L27       693084 S SECRETION OR (SIGNAL (S) PEPTIDE)
L28          635 S L27 AND L1
L29           34 S L28 AND RECOMBIN?
L30           26 DUP REM L29 (8 DUPLICATES REMOVED)
L31           23 S L30 NOT PY>=2003
L32            0 S L31 AND L7
L33            0 S L31 AND L16
L34           19 S L31 NOT PY>=2001
L35          674 S "HEX A"
L36          508 S L35 AND L1
L37            0 S L36 AND L7
L38        34555 S DICTYOSTELIUM OR TETRAHYMENA
L39            0 S L36 AND L38
L40           54 S L38 AND L1
L41            1 S L40 AND (RECOMB? OR HETEROLOGOUS)

     FILE 'MEDLINE, EMBASE, BIOSIS' ENTERED AT 15:20:22 ON 28 JAN 2005
L42        43058 S PROTOZOAN
L43        19210 S  ARCELLA OR CILIATE OR CILIATED PROTOZOAN OR CILIOPHORA OR CY
L44            1 S L1 AND L43
L45            7 S L42 AND L1
L46            4 DUP REM L45 (3 DUPLICATES REMOVED)

=>
```

L34 ANSWER 12 OF 19 MEDLINE on STN

ACCESSION NUMBER: 92210560 MEDLINE

DOCUMENT NUMBER: PubMed ID: 1532576

TITLE: A sequence in beta-**hexosaminidase** from Dictyostelium discoideum required for sorting of proteins to a compartment involved in developmentally induced **secretion**.

AUTHOR: Lacoste C H; Graham T; Kaplan A

CORPORATE SOURCE: Department of Biological Sciences, Fulbright College of Arts and Sciences, University of Arkansas, Fayetteville 72701.

CONTRACT NUMBER: T32HL07050 (NHLBI)

SOURCE: Journal of biological chemistry, (1992 Mar 25) 267 (9) 5942-8.
Journal code: 2985121R. ISSN: 0021-9258.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199205

ENTRY DATE: Entered STN: 19920515
Last Updated on STN: 19970203
Entered Medline: 19920504

AB To study the sorting of proteins in Dictyostelium discoideum, we used vector constructs that contain cDNA coding for the entire beta-**hexosaminidase** protein to prepare transformants of a mutant that lacks this enzyme activity. These transformants overexpressed active, normally processed beta-**hexosaminidase**. The overexpressed enzyme colocalized with other acid hydrolases in the soluble fraction of